

independently of each other. The general behaviour characteristics of species of ghost crabs as recorded by George and Knott are similar to those observed at Dirk Hartog Island.

ACKNOWLEDGEMENTS

I am grateful to Dr. R. W. George for reading the manuscript, and making many valuable suggestions.

REFERENCE

GEORGE, R. W. and M. E. KNOTT. 1965.—The *Ocypode* Ghost Crabs of Western Australia (Crustacea, Brachyura). *J. Roy. Soc. W.A.*, 48 (1): 15-21.

BIRDS AND KANGAROO PAWS

By ERIC H. SEDGWICK, Harvey

G. F. Mees, in his "A Note on the Pollination of the Kangaroo Paw, *Anigozanthos manglesii*," (*W. Aust. Nat.*, 10: 149) remarks upon the paucity of actual published records of birds visiting Kangaroo Paws.

In this connection the following abstract of my notes may be of interest, though only one refers to visits to the species *A. manglesii*.

Western Spinebill, *Acanthorhynchus superciliosus*

December 26, 1952, Nornalup. Hen observed probing Green Kangaroo Paw, *A. viridis*.

January 22, 1956, Augusta. Male probing Green Kangaroo Paw but, apparently disturbed by New Holland Honeyeaters, it retired to the tree-tops.

January 26, 1956, Augusta. Two birds at Green Kangaroo Paws. Many flowers are now dry, but a few bear pollen and the tubes contain nectar—in one, half way down; in a second, near the base.

February 3, 1959, Pemberton. A single bird was noted probing Green Kangaroo Paws by the Warren River.

January 4, 1961, Nornalup. Observed near bridge over river. One bird was visiting Green Kangaroo Paws. Six plants were visited before the bird flew to another species of plant—a tea-tree with a small flower—but was not observed to probe. The bird was then lost to view. Only "good"—not half dead—flowers were visited. Probing appeared to be without damage to the flower. Close examination showed that some of the old flowers were split, but not the fresh ones.

January 5, 1961, Quininnup. Three birds, visiting Green Kangaroo Paws.

Red Wattle-bird, *Anthochaera carunculata*

September 27, 1942, Perth, Kings Park. A Red Wattle-bird was observed visiting Kangaroo Paws, *A. manglesii*, and apparently taking nectar. This behaviour was continued for some time, many flowers being visited.*

* C. F. H. Jenkins (*W. Aust. Nat.*, 11 1968: 19) has also discussed the role of the Red Wattle-bird as a pollinator of this Kangaroo Paw.—Ed.

January 15, 1956, Augusta. Birds observed probing Green Kangaroo Paws.

January 9, 1968, Yallingup. Wattle-bird probing a reddish kangaroo paw, *A. flavida*.

White-naped Honeyeater, *Melithreptus lunatus*

January 5, 1961, Quinninup. One feeding on Green Kangaroo Paw.

New Holland Honeyeater, *Meliornis novae-hollandiae*

January 22, 1956, Augusta. A number of birds were probing Green Kangaroo Paws. The birds often visited several flowers on the same stem before flying to another stem. No flowers of other species were visited, but one bird paused to probe the axils of another species of plant which was not in flower. One bird, seen particularly favourably, had a large yellow patch—apparently pollen—at the base of its bill and on adjacent plumage.

February 3, 1959, Pemberton. Birds noted probing Green Kangaroo Paw by the Warren River.

January 5, 1961, Quinninup. One bird visiting Green Kangaroo Paw.

January 5, 1963, Lake Muir-Rocky Gully. Birds noted en route associated with Green Kangaroo Paws.

SUMMARY

From the foregoing notes it would appear that:

- (a) the Red Wattle-bird is another honey-eater which visits *Anigozanthus manglesii*.
- (b) other species of kangaroo paw are visited by honeyeaters—notably *A. viridis*, which is visited by at least four species.
- (c) visits by birds to kangaroo paws are not infrequent. My notes are of a random nature and are not the result of planned observation.

FROM FIELD AND STUDY

Emu-Wrens and the Forest Zone in South-Western Australia*
—In Western Australia the Southern Emu-Wren, *Stipiturus malachurus*, is a bird of low dense growth in open country such as heathland or the scrubby growth on coastal dunes and hills. Serventy and Whittell (*Birds of Western Australia*, 3rd edn., 1962) comment that it occurs round the south coast but appears to avoid the heavy Jarrah forest country. In March 1966 when the 4th phase of the Harold Hall Expedition was camping at Metricup this species was unexpectedly encountered in several small areas. This is within the Jarrah forest zone and has been partly cleared for pasture, the result being a mosaic of grass paddocks and Jarrah stands mostly adjoining the Busselton highway. Small parties of Emu Wrens were found in one recently cleared area of forest in which the shrubby growth and shoots from tree-stumps, both springing after clearing, formed a rather open low growth. This area was only about five acres in extent and bordered on three sides by forest and on the fourth by open grass pasture. Other birds were encountered in another group

* Results of the Harold Hall Australian Expedition. No. 20. The previous number in this series appears in the *Western Australian Naturalist*, 11 (3):